

Name: _____ Date: _____

Period: _____

Algebra 1 CRT Review Version 3

1. Which of the following is an irrational number?

- a. $\sqrt{9}$
- b. $\sqrt{5}$
- c. $2.\bar{6}$
- d. $\frac{9}{2}$

2. Which of these numbers is between 3 and 4?

- a. $7 - \pi$
- b. $\sqrt{17}$
- c. $5 - \pi$
- d. $\sqrt{19}$

3. Simplify $(4\sqrt{7})(3\sqrt{7})$

- a. $7\sqrt{12}$
- b. $12\sqrt{49}$
- c. $12\sqrt{7}$
- d. 84

4. Carpet for a room measuring 8 yards by 6 yards costs \$9.20 a square yard. Which expression would give the best estimate of the cost, in dollars, of the carpet?

- a. 40×10
- b. 40×9
- c. 50×10
- d. 50×9

5. Simplify the expression:

$$3(5 - 4)^2 + 4 \div 2$$

- a. 5
- b. 1
- c. 8
- d. 11

6. A plane flew from Salt Lake City to Washington, D.C., a distance of 2,095 miles at a constant rate of 475 miles per hour. Its distance, y (in miles), from Washington when it has been flying for x hours is given by the equation $y = 2,095 - 475x$. What is the slope of the graph of the equation?

- a. $\frac{2,095}{475}$
- b. $-\frac{475}{2,095}$
- c. -475
- d. 2,095

7. What is the slope of the line that contains points (9, 3) and (3, 3)?

- a. undefined
- b. 0
- c. $-\frac{1}{2}$
- d. -1

8. What is the slope of the line passing through the points in the table?

X	Y
-6	-6
-1	4
0	6
1	8

- a. 2
- b. -5
- c. -2
- d. 5

9. Given the equation $y = x$ and $y = 2x + 3$, which of the following statements is true about the graphs of the equations?

- The graph of $y = 2x + 3$ has a smaller slope than the graph of $y = x$.
- The graph of $y = x$ is a vertical line.
- The graph of $y = 2x + 3$ has a bigger slope than the graph of $y = x$.
- The graph of $y = 2x + 3$ is shifted 3 units down from the graph of $y = x$.

10. This graph shows a person paying \$10 per week to a friend to repay a \$100 loan. What does the x -intercept tell us?



- The amount of money owed decreases each week.
- That at week 10 the loan is paid off.
- That at week 10 the loan is \$100.
- \$100 is owed.

11. Rewrite $2x + 3y = 12$ in slope-intercept form.

- $3y = -2x + 12$
- $y = -\frac{2}{3}x$
- $y = -\frac{2}{3}x + 4$
- $y = -2x + 9$

12. Determine which of these tables of data shows a nonlinear pattern.

a.

x	0	1	2	3
y	1	3	9	27

b.

x	1	2	3	4	5
Y	2	1	0	-1	-2

c.

x	1	2	4	6
Y	3	5	9	13

d.

x	0	2	4	5
Y	-3	-2	-1	$-\frac{1}{2}$

13. Determine which of these tables of data has a linear pattern.

a.

x	y
-1	$-\frac{1}{2}$
0	1
1	1
2	$\frac{1}{2}$
3	$\frac{1}{4}$

b.

x	y
0	3
1	5
2	7
3	9

c.

x	y
0	1
1	2
2	4
3	8

d.

x	y
0	0
1	1
2	4
3	9

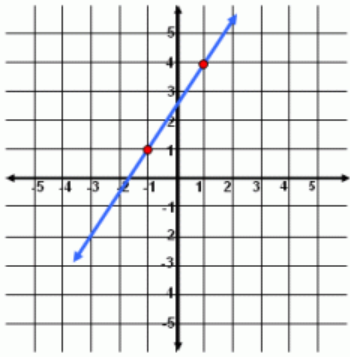
14. What is the equation, in standard form, of the line with a slope $= -2$ passing through the point $(2, -4)$?

- $2x + y = 0$
- $-x + 2y = 6$
- $-2x + y = 0$
- $x - 2y = 6$

15. Write the equation of the line that passes through $(1, 2)$ and has a slope of -5 .

- $y = 7x - 5$
- $y = -5x - 7$
- $y = -5x + 7$
- $y = -5x + 2$

16. Write the equation for this graphed line.



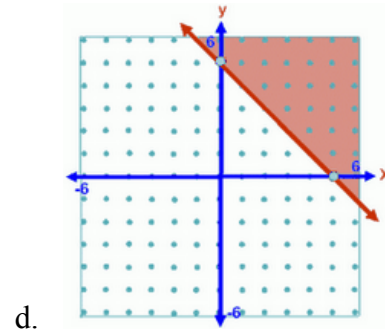
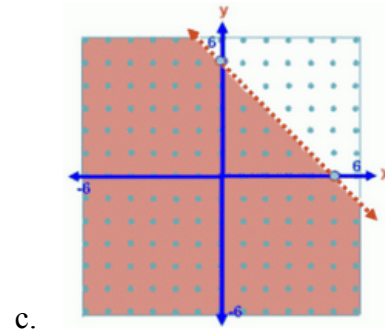
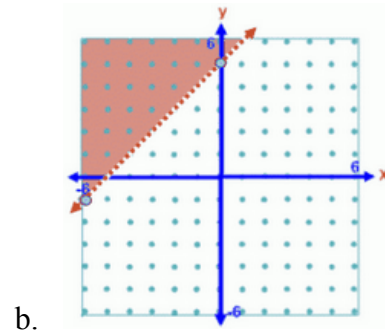
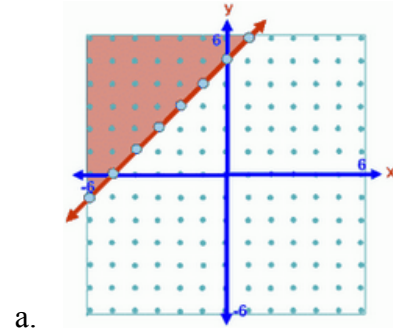
- a. $y = \frac{2}{3}x + \frac{5}{3}$
- b. $y = -\frac{2}{3}x + \frac{1}{3}$
- c. $y = \frac{3}{2}x + \frac{5}{2}$
- d. $y = -\frac{3}{2}x - \frac{1}{2}$

17. Ralph is paying for his stereo. His payoff plan is shown below. What is the x -intercept of Ralph's payoff plan?

Month (x)	Balance (y)
0	\$ 250
1	\$ 200
2	\$ 150
3	\$ 100
4	\$ 50
5	\$ 0

- a. (0, 250)
- b. (0, 50)
- c. (5, 0)
- d. (50, 0)

18. What is the correct graph of the inequality $y > x + 5$?



19. Evaluate the following expression when $q = 3$?

$$4q^2 - 2q + 5$$

- a. 41
- b. 35
- c. 28
- d. 23

20. Evaluate the following expression when $a = 3$ and $b = 8$.

$$3b - 2a^2 + \frac{b}{4}$$

- a. 44
- b. 10
- c. 14
- d. 8

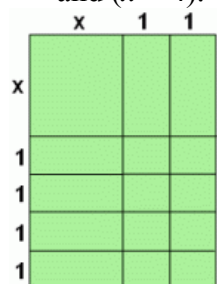
21. Find the product of $(3x + 7)(3x + 9)$.

- a. $6x^2 + 48x + 63$
- b. $9x + 48x + 63$
- c. $9x^2 + 48x + 63$
- d. $9x^2 + 63$

22. Find the product: $(4x + 3y)^2$

- a. $16x^2 + 24xy + 9y^2$
- b. $16x^2 + 12xy + 9y^2$
- c. $16x^2 + 14xy + 9y^2$
- d. $16x^2 + 9y^2$

23. Use the area model to find the product of $(x + 2)$ and $(x + 4)$.



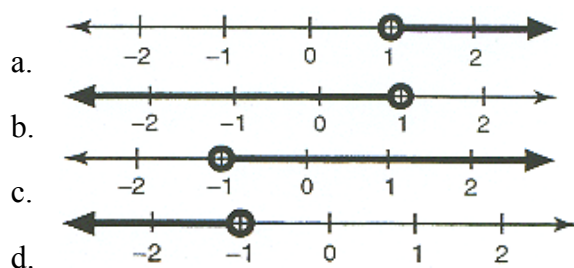
- a. $x^2 + 8x + 8$
- b. $x^2 + 8x + 6$
- c. $x^2 + 8$
- d. $x^2 + 6x + 8$

24. The following area model is the product of which two factors?

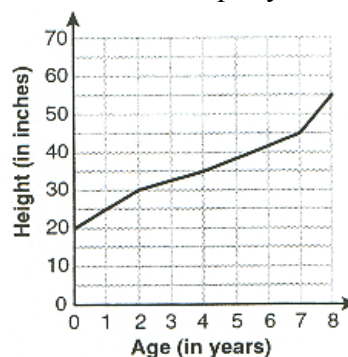
x^2	x
x	1

- a. $(x + 1)(x + 1)$
- b. $(x + 1)(x)$
- c. $(x)(x - 1)$
- d. $(x + 1)(x - 1)$

25. Which graph shows the solution to $-5x + 3 > 8$?



26. The graph below shows Felicity's height on some of her birthdays. During which time period was Felicity growing at an average rate of 10 inches per year?



- a. from age 7 to age 8
- b. from age 4 to age 7
- c. from age 2 to age 4
- d. from age 0 to age 2

27. If a car travels 3 hours and covers a distance of 210 miles, how far will the car travel in 5 hours?

- a. 280 miles
- b. 350 miles
- c. 530 miles
- d. 300 miles

28. The surface area, s , of the box shown below is given by the formula $s = 24 + 14x$. Which equation is equivalent to this formula?

- a. $x = 14s - 24$
- b. $x = 14(s - 24)$
- c. $x = \frac{s}{14} - 24$
- d. $x = \frac{s - 24}{14}$

29. The volume of a cylinder is $V = \pi r^2 h$. Solve for height (h).

- a. $h = (V)(\pi r^2)$
- b. $h = \frac{Vr^2}{\pi}$
- c. $h = \frac{V}{\pi r^2}$
- d. $h = \frac{V\pi}{r^2}$

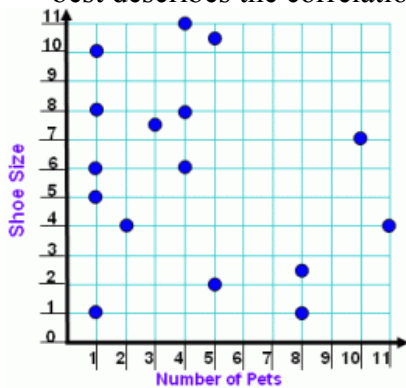
30. Determine the number of possible solutions for the following system of equations.

$$3x + y = 3$$

$$2y = -6x + 6$$

- a. two solutions
- b. one solution
- c. no solution
- d. infinitely many solutions

31. This scatter plot shows the shoe sizes of the students in Mrs. Hand's science class, and the corresponding pets they own. Which of these best describes the correlation of this data?

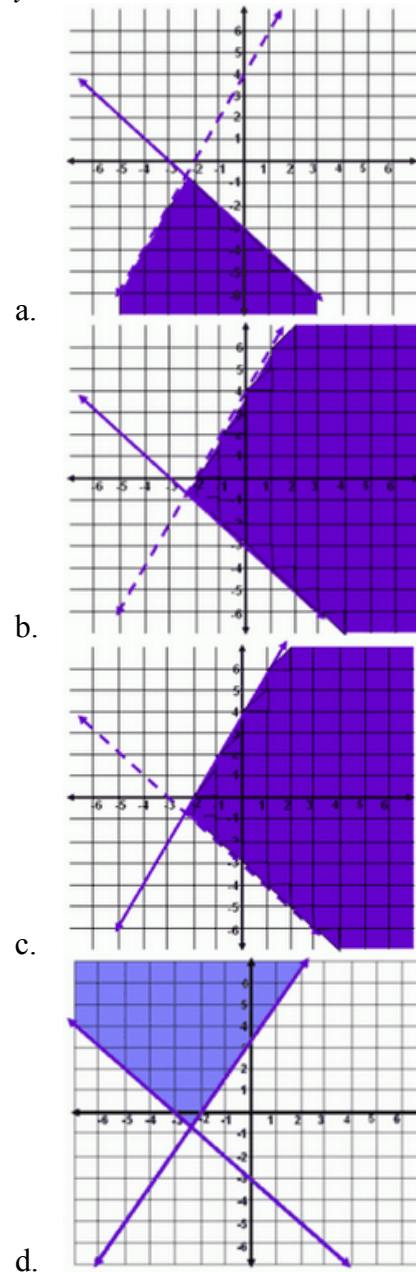


- a. no correlation
- b. positive correlation
- c. negative correlation
- d. linear correlation

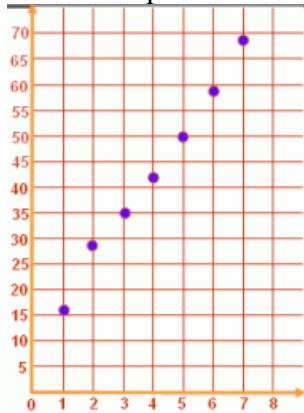
32. Which graph shows the solution to this system of inequalities?

$$y < 2x + 4$$

$$y \leq -x - 3$$



33. The graph of which equation would best fit this scatter plot?



- a. $y = 8x + 10$
- b. $y = 4x + 12$
- c. $y = 2x + 10$
- d. $y = x + 12$

34. This table shows the relationship between the weights of some cars (in thousands of pounds) and their gas mileage (in miles per gallon). What is the equation for the line of best fit of this data?

Car Weight	Mileage
1	30
2	27
2	25
3	22
4	19
5	16
5	15

- a. $y = -\frac{7}{2}x + 33$
- b. $y = -\frac{1}{5}x + 30$
- c. $y = -\frac{1}{2}x + 32$
- d. $y = 4x + 25$

35. A plane was flying from Reno, Nevada to Salt Lake City, Utah, at an altitude of 20,000 feet above sea level. As the pilot approached the Salt Lake City airport, he noted the outside temperature and the altitude of the plane. The data is recorded in the table below. The equation of the best fit line is $y = -200x + 24,000$ where x is the temperature and y is the altitude in feet. Interpret the meaning of the **y-intercept** of the best fit line.

Temperature	20°	33°	57°	78°	94°
Altitude	20,000	17,500	12,800	8,400	5,000

- a. The temperature will be 0° at an altitude of 24,000 feet.
- b. The temperature when the altitude is 0 feet is 120°.
- c. The temperature will decrease until you reach 24,000 feet in altitude.
- d. For each decrease in altitude of 2,000 feet, the temperature decreases by 1°.

Algebra 1 CRT Review Version 3 Key

1. b
2. a
3. d
4. d
5. a
6. c
7. b
8. a
9. c
10. b
11. c
12. a
13. b
14. a
15. c
16. c
17. c
18. b
19. b
20. d
21. c
22. a
23. d
24. a
25. d
26. a
27. b
28. d
29. c
30. d
31. a
32. a
33. a
34. a
35. a